DOCUMENT RESUME

ED 446 633 HE 033 481

AUTHOR	Thayer, Paul B.
TITLE	Retention of Students from First Generation and Low Income Backgrounds.
SPONS AGENCY	Department of Education, Washington, DC.; National TRIO Clearinghouse, Washington, DC.
PUB DATE	2000-05-00
NOTE	9p.; Reprinted from "Opportunity Outlook," the journal of the Council for Opportunity in Education.
AVAILABLE FROM	Council for Opportunity in Education, 1025 Vermont Ave., Suite 900, Washington, DC 20005. Tel: 202-347-2218 or 202-347-7430; e-mail: Clearinghouse@hqcoe.org; available for download at http://www.trioprograms.org/clearinghouse.
PUB TYPE	Information Analyses (070)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Academic Persistence; College Attendance; *College Students; Higher Education; *Low Income Groups; *School Holding Power; Withdrawal (Education)
IDENTIFIERS	*First Generation Students; Student Support Services

ABSTRACT

This paper, the third in a series of Research Informing Practice Short Papers commissioned by the National TRIO Clearinghouse, reviews some of the recent literature related to student retention in higher education, with particular emphasis on factors affecting students from low income and first generation backgrounds. According to the paper, this emphasis was chosen for two reasons. First, because students from first generation and low income backgrounds are among the least likely to be retained through degree completion, institutional retention efforts must take the needs of such students into account if more equitable educational attainment rates are desired. Second, strategies that work for first generation and low income students are likely to be successful for the general student population, as well. By contrast, strategies that are designed for general campus populations without taking into account the special circumstances and characteristics of first generation and low income students will not often be successful for the latter. After describing theoretical models of retention, special characteristics of these students, and retention efforts addressing them, the paper concludes by recommending promising strategies for implementation by Student Support Services programs, McNair programs, and other programs addressing the needs of these students. It suggests that structured first-year and learning community programs respond in practical ways to established retention theory and to the specific needs and characteristics of students from low income and first generation backgrounds. (Contains 38 references.) (EV)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 446 633

Reprinted from
Opportunity Outlook
The Journal of the
Council for Opportunity in Education
May 2000

Retention of Students from First Generation and Low Income Backgrounds

Students from first generation and low income backgrounds are less likely to enroll in postsecondary education and less likely to persist through graduation. In the interest of fulfilling the promise of increased access and in the interest of achieving other educational and practical institutional goals, postsecondary institutions will logically look to programs like Student Support Services to assist in increasing the retention and graduation rates of such students.

by Paul Thayer

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

This reprint is the third in a series of Research Informing Practice Short Papers commissioned by the National TRIO Clearinghouse

1025 Vermont Avenue, Suite 900
Washington, D.C. 20005
Phone: 202-347-2218 or 202-347-7430
Email: Clearinghouse@hqcoe.org

HE 033 481

BEST COPY AVAILABLE

Retention of Students

From First Generation and Low Income Backgrounds

PAUL B. THAYER, PH.D.

If "access" was a defining educational opportunity theme for higher education beginning in the mid-1960s, "retention" has become a defining theme for the 1990s and beyond. This is not to say that either access or retention has been fully realized. The dimensions of under-representation of students from low income, first generation, and ethnically diverse backgrounds in colleges and universities are still enormous. Even for students from those backgrounds who do enroll in higher education, access is a hollow promise when graduation rates are far below those of students from other backgrounds.

Graduation rates for U.S. colleges and universities have actually been declining for several years (Astin, et al., 1996, and American College Testing, 2000a and 2000b). For two-year colleges, the three-year graduation rate has declined from 44.1 percent in 1983 to 37.5 in 1999; for four-year colleges and universities the five-year graduation rate has declined from 57.5 percent to 51.6 percent. For both two-year and four-year institutions, the figures for 1999 establish an all-time graduation rate low (American College Testing, 2000). Almost certainly, this decline has been influenced by the booming national economy and accompanying availability of attractive jobs, escalating college costs, and eroding financial aid grant resources (Gladieux, 1996). In the midst of this discouraging trend, however, research and experimentation have yielded greater insight into the factors influencing student persistence and growing awareness of effective interventions that increase student persistence.

This short paper reviews some of the recent literature related to student retention, with particular emphasis on factors affecting students from low income and first generation backgrounds. This emphasis is appropriate for two reasons. First, since students from first generation and low income backgrounds are among the least likely to be retained through degree completion, institutional retention efforts must take the needs of such students into account if more equitable educational attainment rates are desired. Second, strategies that work for first generation and low income students are likely to be successful for the general student population as well. By contrast, strategies that are designed for general campus populations without taking into account the special circumstances and characteristics of first generation and low income students will not often be successful for the latter.

The article concludes by recommending promising strategies for implementation by Student Support Services programs, McNair programs and other programs addressing the needs of students from first generation and low income backgrounds. Structured first year and learning community programs respond in practical ways to established retention theory and to the specific needs and characteristics of students from low income and first generation backgrounds.

I. Theoretical Models of Retention

Researchers and theorists have proposed several different models to explain student persistence and attrition. Among the more prominent models are Alexander Astin's Involvement Model (1979), Vincent Tinto's Student Integration Model (1975, 1993), and Bean's Student Attrition Model (1980). There are common themes among the models. In one way or another, each recognizes that students bring a number of characteristics, experiences, and commitments to their college entry, including academic preparedness levels, parent educational attainment and aspirations for their children, socioeconomic levels, and aspirations for learning and degree attainment. Upon entry to college, each of the models attempts to describe the ways in which the student and the institutional environment interact with one another to form and re-form student attitudes, behavior, and commitments.

To the extent that institutions attend primarily to the concerns represented by entering student characteristics, institutional retention policies will focus on the selection process: identifying, admitting, and attracting students with

characteristics predictive of retention. To the extent that the institution is concerned about the student-environment interaction after college entry, policies will be directed toward enriching the learning environment, increasing the quality of student support systems, enhancing images of institutional prestige, and raising student expectations for performance and benefit.

While it may be possible to improve retention rates by attending only to the selection process or only to the learning environment, the greatest gains will result from addressing both at once, and connecting the two processes together. Particularly for institutions whose mission and commitments require attention to access and diversity, this double-sided approach is essential. The admissions/selections process can be constructed to identify the diverse assets and needs that individual students bring to the campus, and experiences and support services can be arranged to nurture student assets and address student needs promptly upon the students' enrollment. Because the greatest proportion of students who leave the institution are likely to do so within the first four semesters (Berkner, 1996; Porter, 1990), retention strategies must be particularly influential early in students' transition to the campus.

The dual influence of entering student characteristics and the educational environment is the subject of a study by Thomas Mortenson (1997). The study predicted graduation rates based on a measure of academic preparedness (SAT scores), adjusting for the proportion of part-time and off-campus students. Mortenson theorizes that the difference between the predicted and actual graduation rates is at least in part a reflection of the quality of the educational environment, and its support or lack of support for student development and learning.

Institutions have opportunities to design environments and activities that are supportive of particular subpopulations, such as first generation and low income students. Since many students in this population tend to be at greater risk for attrition, effective programs may play a strategic role in an institution's overall retention strategy.

II. Special Characteristics of Students from First Generation and Low Income Backgrounds

Two dimensions of "disadvantage" that have negative associations with degree attainment are low family income and first generation status. A growing body of research confirms that these two factors help to define populations that may have a significantly different experience in the higher education environment.

Thomas Mortenson (1998) has examined the relationship between family income and educational attainment over several decades. His analysis shows that students from families in lower income quartiles are far less likely than those in higher income quartiles to earn a bachelor's degree by the age of 24. Using 1996 data, those in the top family income quartile were found to complete a baccalaureate degree at a 74% rate, as compared to 5% for those in the bottom income quartile. Trends show that the gap in degree completion rates between the top and bottom income quartiles has widened over time.

Using 1996 data, those in the top family income quartile were found to complete a baccalaureate degree at a 74% rate, as compared to 5% for those in the bottom income quartile. Trends show that the gap in degree completion rates between the top and bottom income quartiles has widened over time.

Family income appears to influence students' likelihood of entering and completing college, even when controlling for academic ability. Akerheilm, et al. (1998) found that among students who performed in the top third on standardized tests, low income students were five times more likely to skip college than high income students. Ottinger (1991) found that high ability high school seniors from low socioeconomic backgrounds were less likely to attain bachelors degree than high ability seniors from high income backgrounds.

First generation students may also be at a disadvantage for educational attainment. A student is considered first generation if neither of his/her parents has earned a bachelor's degree. First generation students tend to be more concentrated in two-year colleges (U.S. Department of Education, 1998a; London, 1992), but are found at all levels of postsecondary education.

First generation students are likely to enter college with less academic preparation. As compared to their non-first generation peers, Pascarella et al. (1995) found that first generation students had lower pre-college critical thinking levels, and Riehl (1994), in a single institution sample, found that first generation students had significantly lower SAT scores and high school grade point averages. Academic preparation, however, is but one of many obstacles confronting first generation students.

First generation students are likely to have limited access to information about the college experience, either first-hand or from relatives (Willett, 1989). They are likely to lack knowledge of time management, college finances and budget management, and the bureaucratic operations of higher education (Richardson and Skinner, 1992). Of equal concern, first generation students are likely to perceive less support from their families for attending college (York-Anderson and Bowman, 1991; Billson and Terry, 1982).

The transition to the college campus can be particularly difficult for first generation students. First generation students have been found to be less likely to encounter a welcoming environment on campus (Terenzini, 1996). Saufley et al. (1983) describe the dilemmas of students who for whom

Entering the university means not only that they must leave home for an unfamiliar academic setting, but that they

also must enter an alien physical and social environment that they, their family, and their peers have never experienced. They are faced with leaving a certain world in which they fit for an uncertain world where they already know they do not fit.

In fact, first generation students may find themselves "on the margin of two cultures," and must often renegotiate relationships at college and at home to manage the tension between the two (London, 1992). Given these many possible obstacles, it is not surprising to find examples of students whose shock at college entry took years to overcome (Richardson and Skinner, 1992).

In fact, first generation students may find themselves "on the margin of two cultures," and must often renegotiate relationships at college and at home to manage the tension between the two (London, 1992).

As a consequence, first generation students are likely to persist in college at lower rates than their non-first generation peers. A national study of first generation students (U.S. Department of Education, 1998a) found that first generation students persisted and attained credentials at lower rates in both four-year institutions and two-year public institutions. The study concluded that "even when controlling for factors that are commonly associated with first generation students, such a socio-economic status, institution type, and attendance status, first generation status still had a negative effect on educational attainment."

The experience of first generation students varies considerably depending on income background. As Richardson and Skinner (1992) have noted, first generation students from middle income backgrounds find the adjustment to college less difficult than first generation students from ethnic minority or low income backgrounds. When a student is non-white and is from a first generation, low income background, the obstacles between college entry and degree attainment are compounded (Rendon, 1995).

III. Retention Efforts Addressing Low Income and First Generation Students

There are several reasons why some institutions have adopted strategies to improve retention rates for students from first generation and low income backgrounds. First, for all the reasons identified earlier, first generation and low income students may be among those at the highest risk for dropping out. Second, attention to students from first generation and low income backgrounds often helps institutions to address their commitment to racial and cultural diversity. Finally, institutions often discover that the strategies that are effective for increasing persistence of first generation and low income students are also successful for increasing the persistence rates of the general campus population as well.

In order to be successful, interventions must address the obstacles often associated with low income and first generation background. These obstacles include lack of financial resources; lack of knowledge of the campus environment, its academic expectations, and bureaucratic operations; lack of adequate academic preparation; and lack of family support. In addition, interventions must ease the difficulties of the transition to college, mitigate to some degree the cultural conflict students encounter between home and college community, and help to create a more supportive, welcoming campus environment.

Effective strategies will be multifaceted. Rather than focusing exclusively on social adjustment issues or academic issues, they will promote the development of supportive social communities with a strong academic focus (Tinto, 1993). They will assist students in developing a sense of social security accompanied by a sense of academic competence; and promote connections with student activities and support services at the same time as connections with majors, academic disciplines, and with faculty in and outside of the classroom.

IV. Promising Strategies for Programs Serving Students from First Generation and Low Income Backgrounds

The Student Support Services programs offer numerous and diverse examples of successful retention strategy for low income, first generation student populations. One of the federal TRIO programs, Student Support Services (SSS) is charged with increasing the rate of retention and graduation for students from disadvantaged backgrounds, including students from first generation and low income backgrounds, and those with physical or learning disabilities. Nationally, SSS has accumulated three decades of experience, and currently serves students on more than 700 college and university campuses.

Drawing on information from the National Study of Student Support Services (Chaney, et al., 1997) a "best practices" study was conducted (Muraskin, 1997a). According to the study, one of the common practices of high-performing Student Support Services programs is the provision of a "structured freshman year" program. Lana Muraskin (1997b) emphasizes the importance of organizing to promote positive academic experiences for students early in their freshman year, and identifies seven features of such a program:

- project participation in the college admissions process for at-risk students
- pre-freshman-year academic and social preparation
- a major project role in participants' initial course selection
- an intrusive advising process throughout the freshman year
- provision of academic services that buttress the courses in which the participants are enrolled

- group services that extend service hours and build cohesion among participants
- a powerful message of success through conscientious effort

Some Student Support Services programs are implementing "learning community"-type strategies as a means of building a sense of community around an academic focus. These learning community strategies can be an important part of a structured freshman year program, and provide an effective vehicle for incorporating many of the features of effective programs identified by Muraskin.

Vincent Tinto (1998) proposes the adoption of learning community strategies as an organizational response to the findings of retention research. Learning communities represent a strategy for promoting "shared learning" and "connected learning" among students. According to Tinto, they help students form supportive peer groups that extend beyond the classroom, become more actively involved in classroom learning even after class, and increase the quality of their learning.

Because these outcomes of learning communities are precisely those that would especially benefit most students from first generation and low income backgrounds, learning communities should be among the primary strategies utilized by Student Support Services programs and other programs serving students from first generation and low income backgrounds. Within the learning community concept, there is room for a wide variety of implementation alternatives. For that reason, programs can tailor learning community activities to the particular characteristics of their institutions and student populations.

V. Examples of Learning Community Strategies

Some examples serve to illustrate the way in which learning community strategies operationalize retention theory and research to increase student success. The passages below highlight learning community strategies that have been implemented in the form of summer bridge programs, academic year programs, and linked summer-and-academic-year programs.

Skagit Valley College

Skagit Valley College is a public two-year community college in northwest Washington state. The Student Support Services project has successfully utilized learning community concepts through integrated course clusters for seven years.

SSS participants can enroll in a cluster of classes in which they are the only students. In one case, the "Mystery in Math" cluster helps students address the challenges of college mathematics, a subject that presents a formidable barrier to continued success in college for many students. In this instance, a college mathematics course is linked together with a study skills class and a math tutorial, all for credit. The mathematics course and study skills classes are team-taught, and thoroughly integrated. In another case, the "Choices" cluster integrates courses in reading, writing, communication, and study skills.

SSS project staff find that there are many advantages for students participating in the learning community. First, students find "built-in" academic support, as study skills are explored and developed in relation to specific content areas. Second, students develop a sense of community and a network of support through their classes. They form bonds in class that extend beyond the classroom. Third, the learning community mechanism serves to help students focus on school, despite numerous distractions and obligations in the rest of their lives. Finally, instructors find that working in the learning community keeps teaching "fresh," since it encourages flexibility, creativity, and crossing of disciplinary boundaries.

Contact: Kim Requa, SSS Director or Nancy Flint, SSS Instructor, Skagit Valley College, Mt. Vernon, WA.

Drexel University

Drexel University is a private, medium-size, urban university located in Philadelphia, Pennsylvania. For five years, the Student Support Services project at Drexel has been operating a Bridge Program to develop a sense of community among project participants.

The SSS Bridge Program involves sixty students in a structured academic program in the summer prior to their first fall semester. Students enroll together in a number of credit and non-credit courses, including such subjects as math, composition, science, critical thinking, and Summer Seminar. As an integral part of their courses, students interact not only with their course instructors, but with a peer mentor and an advisor from the permanent staff.

SSS project staff have discovered that the Bridge experience forges bonds among the students, and between the students and the SSS program. Students enter the fall with confidence, knowing how to "get things done." They are at home on campus, and at home as well in the SSS Study Center. These on-campus connections are especially important, since most of the students are commuters. Research has shown that the retention rate of Bridge participants is higher than the campus average, and the highest for any identified group other than students in the Honors Program.

Contact: Brighid Blake, SSS Director, Drexel University, Philadelphia PA.

Colorado State University

Colorado State University is a large public Land Grant University in Fort Collins, Colorado. The TRIO programs on the campus have been conducting a Bridge Scholars Program for many years, but have now connected the summer Bridge Program to a recently-created academic year learning community called the Key Academic Community.

The Bridge Scholars Program involves thirty students identified by the TRIO programs and/or by the Admissions Office. Students earn eight university credits by taking three courses in common: English Composition, General Psychology, and a Leadership Seminar. Students reside together on one floor of a residence hall, and are supported by live-in peer mentor "Bridge Coordinators." The experience is highly structured to include grade monitoring, weekly feedback, and connection to faculty, advisors, resources, and opportunities.

In the fall, Bridge Scholars enroll in the Key Academic Community. The Key program promotes a strong social community with an academic focus. Students reside together in one section of a residence hall, and enroll in Course Clusters. The clusters consist of three core curriculum courses: two courses in two different disciplines and an interdisciplinary seminar linking ideas from the companion courses through an integrating theme. Peer mentors, workshops, and activities provide an environment with enriched feedback, information, and connection to faculty, information, opportunities, services, and personal support.

Over the last five years, longitudinal analysis shows that each student cohort of Bridge Scholars Program participants has persisted at rates higher than the university average. Participants in the Key Academic Community have evidenced greater connection to the University. They have also earned higher grade point averages and persisted at higher rates as compared to similar non-participants.

Contact: Paul Thayer, Director of Undergraduate Student Retention, or Oscar Felix, Center for Educational Access and Outreach, Colorado State University, Fort Collins, CO.

Michigan State University

Michigan State University is a very large, public, four-year Land Grant University located in East Lansing, Michigan. The Student Support Services project has been operating a summer bridge program for eleven years in conjunction with its academic year programs.

The SUPER Program (Summer University Program—Excellence Required) identifies thirty students with high potential for success, but multiple risk factors, and involves them in a summer program on the University campus. The students live together, take a number of credit and non-credit classes together from selected faculty members, and participate in workshops designed to promote knowledge of and connection to the campus. The program is highly structured and intrusive.

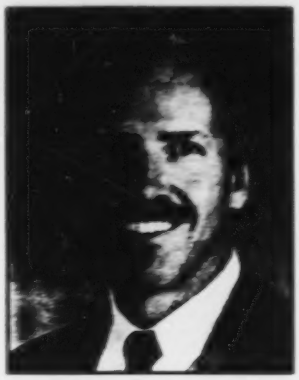
At the conclusion of the summer, SUPER students reside together in a university residence hall for their first full academic year. They meet weekly with SUPER staff, either individually or in groups, and are part of a Mentoring Program. They enroll in clusters of courses for both the fall and spring semesters. The classes are in the academic core, and some are enriched to provide additional support. SUPER students meet with their SSS counselors regularly during each semester, and participate in an SSS-sponsored orientation seminar during one or both semesters of their first year.

Project staff observe that SUPER students start the semester with a greater degree of comfort on campus, and with a core of supportive friends. They readily form study groups with other SUPER students, and engage more easily with faculty. They also tend to assume leadership roles on campus, either formally or informally. SUPER students have earned grade point averages higher than other SSS students, and their persistence rate of 90% from freshman to sophomore year exceeds the average rate for the institution.

Contact: Florence Harris, SSS and McNair Director, Michigan State University, East Lansing, MI.

VI. Summary

Students from first generation and low income backgrounds are less likely to enroll in postsecondary education and less likely to persist through graduation, even when controlling for levels of achievement. In the interest of fulfilling the promise of increased access and in the interest of achieving other educational and practical institutional goals, postsecondary education institutions will logically look to programs like Student Support Services to assist in increasing the retention and graduation rates of such students. Structured first year programs, including learning community strategies, offer exciting possibilities for enriching student persistence, increasing student connectedness to the college experience, and enhancing the quality of learning.



Dr. Paul Thayer is the Director of Undergraduate Student Retention at Colorado State University where he responsible for developing comprehensive institutional strategies for increasing student retention rates. Prior to assuming this responsibility in 1997, he worked with access programs at the University for nineteen years. During much of this time, he directed the Center for Educational Access and Outreach at the University. The Center conducts a variety of programs designed to increase educational opportunity for persons from underrepresented backgrounds, including Upward Bound, Talent Search, the Educational Opportunity Center, the University Mentoring Program, the Bridge Scholars Program, and the First Generation Award Program. Dr. Thayer received his Ph.D. and Masters degrees from the University of Colorado at Denver, and his Bachelor of Arts degree in History from Williams College.

Recommended Sources on Retention of Students from First Generation and Low Income Backgrounds

American College Testing (2000b). National college dropout and graduation rates, 1999. From the World Wide Web, March 19, 2000. http://www.act.org/news/releases/2000/02-16b00.html.

American College Testing has tracked retention and graduation rates for colleges and universities since 1983. The annual report on dropout and graduation rates provides data on trends over the years since 1983, and current information by institution type, admissions selectivity, and selectivity and degree level.

Astin, Alexander W., Tsui, L., and Avalos, Juan (1996). Degree attainment rates at American colleges and Universities: Effects of race, gender, and institutional type. Higher Education Research Institute, University of California at Los Angeles.

This study provides national data on degree attainment, based on data from a survey of 365 baccalaureate-granting institutions. The study examines differentials in degree attainment by institutional type, gender, racial group, and gender and racial group in combination. The effects of input variables (high school grades and SAT scores) are also analyzed. The study emphasizes that academic preparation levels must be taken into account in order to fairly evaluate institutional performance with respect to graduation rate. Finally, the study offers a method for individual institutions to predict their degree attainment rate from entering student data.

Muraskin, Lana (1997b). A structured freshman year for at-risk students. Washington, D.C.: National TRIO Clearinghouse.

Based on her article, "'Best Practices' in Student Support Services, Follow-up Study of Student Support Services Programs," Muraskin suggests the elements that compose structured first-year programs in successful Student Support Services projects. Drawing from retention research and the National Evaluation of Student Support Services (Chaney et al., 1997), the monograph identifies ways that Student Support Services projects have designed strategies to engage students from disadvantaged backgrounds with the project and the campus.

RendÛn, Laura (1994). Validating culturally diverse students: Toward a new model of learning and student development. Innovative Higher Education, 19:1, Fall, 1994.

RendÛn examines how nontraditional students, including students of color and first generation students, often enter college with an expectation of failure, but "suddenly began to believe in their innate capacity to learn and to become successful college students." Her qualitative research suggests that external agents, in or outside of the classroom, can play a powerful role in "validating" students, i.e., taking an active interest in their progress, supporting their academic and social involvement and development, and affirming their place in the educational process. She suggests ways that institutions can facilitate and promote validation of nontraditional students.

Tinto, Vincent (1998). Colleges as communities: Taking research on student persistence seriously. The Review of Higher Education, 21:2, Winter, pp. 167-177.

Tinto asks the question, What if we were to take twenty years of research on retention seriously? He concludes, We would construct learning communities. Tinto outlines the characteristics of learning communities, including "shared learning" and "connected learning," and describes the benefits that these experiences offer students. The benefits include more time on task, blurring of the lines between academic engagement and social engagement, increased academic performance, and increased persistence toward graduation.

Zwerling, L.Steven and London, Howard B., editors, First-Generation Students: Confronting the Cultural Issues. (New Directions for Community Colleges) 80, winter. San Francisco: Jossey-Bass.

Zwerling and London bring together a number of perspectives on first generation students, represented by several perceptive writers and researchers. A central theme that emerges through the readings is that first generation students are "caught between two worlds," and that the dilemmas they face are at once profound and complex. The authors of various chapters illuminate the first generation experience through personal narrative and reference to research. Taken together, the chapters build a composite and rich view of the challenges, struggles, and achievements of first generation students, and suggest ways that institutions and programs can support those students' aspirations and success.

BEST COPY AVAILABLE

References

Wetherill, K., et al. (1998). Factors Related to College Enrollment: Final Report. Princeton, N.J.: Mathtech, Inc.

American College Testing (2000a). College dropout rate improves, but graduation rate falls. From the World Wide Web, February 16, 2000. http://www.act.org/news/releases/2000/02-16-00.html.

American College Testing (2000b). National college dropout and graduation rates, 1999. From the World Wide Web, March 19, 2000. http://www.act.org/news/releases/2000/02-16b00.html.

Astin, A. W. (1975). Preventing Students from Dropping Out. San Francisco: Jossey-Bass.

Astin, A.W. (1979). Four Critical Years. San Francisco: Jossey-Bass.

Astin, A.W., Tsui, L., and Avalos, J. (1996). Degree attainment rates at American colleges and Universities: Effects of race, gender, and institutional type. Higher Education Research Institute, University of California at Los Angeles.

Bean, J.P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. Research in Higher Education, 12:155-187.

Berkner, L., et al. (1996). Descriptive summary of 1989-90 beginning postsecondary students five years later with an essay on postsecondary persistence and attainment. Washington DC: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics.

Billson, J. and Terry, M. (1982). In search of the silken purse: Factors in attrition among first-generation students. College and University, Fall.

Chaney, B. et al. (1997). Third-Year Longitudinal Study Results and Program Implementation Update. National Study of Student Support Services. Washington, D.C.: U. S. Department of Education.

Gladieux, L. (1996). College opportunities and the poor: Getting national policies back on track. Washington: The Center for the Study of Opportunity in Higher Education and The College Board.

Levin, M. and Levin, J. (1991). A critical examination of academic retention programs for at-risk minority college students. Journal of College Student Development, 32, July.

London, H. (1989). Breaking away: A study of first-generation college students and their families. American Journal of Education, February.

London, H. (1992). Transformations: Cultural challenges faced by first-generation students. In Zwerling, L. and London, H., editors, First-Generation Students: Confronting the Cultural Issues. (New Directions for Community Colleges) 80, winter. San Francisco: Jossey-Bass.

Mortenson, T. (1997). Actual and Predicted Graduation Rates for 1100 Colleges and Universities. Postsecondary Education Opportunity, 58, April.

Mortenson, T. (1998). Postsecondary Education Opportunity, 75, September.

Muraskin, L. (1997a). "Best Practices" in Student Support Services, Followup Study of Student Support Services Programs. Washington, D.C.: U.S. Department of Education.

Muraskin, L. (1997b). A Structured Freshman Year for At-Risk Students. Washington, D.C.: National TRIO Clearinghouse.

Ottinger, C. (1991). College going, persistence, and completion patterns in higher education: What do we know? Washington, D.C.: American Council on Education Research Briefs, 2:3.

Padron, (1992). The challenge of first-generation college students: A Miami-Dade perspective. In Zwerling, L. and London, H., editors, First-Generation Students: Confronting the Cultural Issues. (New Directions for Community Colleges) 80, winter. San Francisco: Jossey-Bass.

Pascarella, E. and Terenzini, P. (1991). How College Affects Students. San Francisco: Jossey-Bass.

Pascarella, E. et al. (1995). What have we learned for the first year of the National Study of Student Learning? Washington, D.C.: Office of Educational Research and Improvement. (ERIC: ED 381 054)

Porter, O. (1990). Undergraduate Completion and Persistence at Four-Year colleges and Universities: Detailed Findings. Washington: National Institute of Independent Colleges and Universities.

Rendon, L. (1994). Validating culturally diverse students: Toward a new model of learning and student development. Innovative Higher Education, 19:1, Fall, 1994.

Rendon, L. (1995). Facilitating retention and transfer for first generation students in community colleges. Paper presented at the New Mexico Institute, Rural Community College Initiative (Espanola, NM, March 1, 1995). (ERIC: ED383369)

Richardson, R. & Skinner, E. (1992). Helping first-generation minority students achieve degrees. In Zwerling, L. and London, H., editors, First-Generation Students: Confronting the Cultural Issues. (New Directions for Community Colleges) 80, winter. San Francisco: Jossey-Bass.

Riehl, R. (1994). The academic preparation, aspirations, and first-year performance of first-generation students. College and University, 70:1, Fall.

Snuffley, et al. (1983). The struggles of minority students at predominately white institutions.

Teaching Minority Students. Washington: Jossey-Bass, 1983.

Seidman, A. (1996). Retention revisited: R + E, ID + E & In Is. College and University, Spring.

Terenzini, P., et al. (1996). First-generation college students: Characteristics, experiences, and cognitive development. Research in Higher Education, 37:1.

Tinto, V. (1975). Dropout from Higher Education: A Theoretical Synthesis of Recent Research." Review of Educational Research, 45: 89-125.

Tinto, V. (1993). Leaving College: Rethinking the Causes and Cures of Student Attrition, 2nd ed. Chicago: University of Chicago Press.

Tinto, V. (1998). Colleges as communities: Taking research on student persistence seriously. The Review of Higher Education, 21:2, Winter, pp. 167-177.

U.S. Department of Education (1998a). National Center for Education Statistics. First-Generation Students: Undergraduates Whose Parents Never Enrolled in Postsecondary Education, NCES 98-082, by Anne-Marie Nunez and Stephanie Cuccaro-Alamin. Washington, D.C.

U.S. Department of Education (1998b). National Center for Education Statistics. Reconceptualizing Access in Postsecondary Education: Report of the Policy Panel on Access, NCES 98-283. Washington, D.C.

Willet, L. (1999). Are two-year college students first-generation students? Community College Review, 17:2, Fall.

York-Anderson, D. and Bowman, S. (1991). Assessing the college knowledge of first-generation and second-generation college students. Journal of College Student Development, 32, March.

Retention of Students from First Generation and Low Income Backgrounds is the third in a continuing series of National TRIO Clearinghouse short papers that condense current research on topics relevant to TRIO and other educational opportunity programs. The purpose of the short papers is to provide a research framework for project practice. These papers are available as reprints and are downloadable from the national TRIO Clearinghouse Web site at www.trioprograms.org/clearinghouse [Clearinghouse Publications].

Future topics include: TRIO Practitioner as Researcher, Welfare to Work Legislation and TRIO Students, Technology and Upward Bound, Summer Bridge Programs and Student Support Services, Retention of Males in Upward Bound, and a History of Veteran's Upward Bound.

The National TRIO Clearinghouse, an adjunct Educational Resources Information Center (ERIC) Clearinghouse on Educational Opportunity affiliated with the ERIC Higher Education Clearinghouse, collects and disseminates information, applied program materials, resources, and research related to TRIO Programs and TRIO students. Housed in the Center for the Study of Opportunity in Higher Education, Council for Opportunity in Education, the National TRIO Clearinghouse is funded by a grant from the United States Department of Education. For additional information about the Clearinghouse, contact Andrea Reeve, Director.

BEST COPY AVAILABLE